

ABSTRACT

The present invention relates to three-dimensional microstructures and methods for making these microstructures, particularly microstructures having integral features less than about 1 mm. Examples of these microstructures include trusses. The microstructures can be prepared from two-dimensional structures having a deformable portion. Thus, by applying a deformation along these deformable portions, e.g. bending, a third-dimension can be created. The deformable portions can comprise thinner dimensions than more rigid portions to allow facile deformation to a predetermined angle or orientation. Electroplating at least a portion of the three-dimensional microstructure with a metal coating allows the formation of integral features in addition to covering any defects formed by the deformation and/or strengthening any thin components. The initial two-dimensional microstructure can be prepared by various patterning methods such as soft lithographic methods.

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